

## AMENDMENT

### In The Specification:

Please replace the paragraph from page 7, line 28 through page 8, line 20, with the following rewritten paragraph:

Referring now to FIG. 5, horizontal and vertical filtering algorithms will be discussed. In a horizontal filtering algorithm, vertical boundary 512 separates a first horizontal sub-block 514 and a second horizontal sub-block 516. At least one pixel video value for the pixels in sub-blocks 514 and 516 are utilized in the horizontal filtering algorithm 510. Using luma values as an example of one or more pixel video values that may be utilized, the luma value of a pixel at coordinate (i,j) is defined as  $L_{ij}$ .  $X_{ij}$  is defined as the average mean of the pixel video values (e.g., luma values) in a sub-block 514 or 516, and  $V_{ij}$  is defined as the average variance. The average mean and the average variance of the pixel video values are calculated for each of sub-blocks 514 and 516. For example, in an 8 pixel block,  $X_{ij}$  is equal to one-eighth of the summation from  $k$  equals zero to  $k$  equals 7 of  $L_i(8*j+k)$ . Likewise,  $V_{ij}$  equals one-eighth the summation from  $k$  equals zero to  $k$  equals 7 of the square of the difference between  $L_i(8*j+k)$  and  $X_{ij}$  (that is,  $L_i(8*j+k) - X_{ij}$ ). Upon a predetermined condition being satisfied, where the condition may be based upon the calculated average mean and average variance values, pixels 518 and 520 adjacent to vertical boundary 512 are filtered by having their respective pixel video values recalculated. The recalculation a pixel video value for pixel 518, defined for example as  $L_i(k+7)$  for sub-block 514, may be implemented as being equal to an average of the pixel video value of at least one or more pixels disposed proximal to pixel 518. For example, the recalculated luma value  $L_i(k+7)$  is equal to one-third the sum of  $L_i(k+6)$ ,  $L_i(k+7)$ , and  $L_i(k+8)$ . In one embodiment, pixels disposed adjacent to vertical boundary 512, such as pixels 518 and 520, where existent, are filtered by recalculating a respective pixel video value. In a vertical filtering algorithm 522, Average pixel video values for sub-blocks 524 and 526 of pixels above and below

horizontal boundary 528, respectively are calculated in a corresponding manner as the calculation of average pixel video values in horizontal filtering algorithm 510. Upon satisfaction of a predetermined condition, where the condition may be based upon the calculated average mean and average variance values, pixels adjacent to horizontal boundary 528 are filtered by having a pixel video value recalculated. In one embodiment, pixels below and adjacent to horizontal boundary 528 are vertically filtered. A recalculated luma value for pixel 530 may be set as equal to one-half the sum of  $X(i-1)j$  and  $Li(k+3)$ . In one embodiment, for variance calculations, the variance values may be approximated. In a particular embodiment, a variance values are approximated using a piece-wise linear estimate. For example, in an approximation  $X^2$  may be, where  $X$  is represented as a digital value, where  $X$  is  $X_7X_6X_5X_4X_3X_2X_1X_0$ ,  $X^2$  may be approximated as  $X_70X_60X_50X_40X_30X_20X_10X_00$ . For negative values of  $X$ ,  $X$  may be converted to a positive value and then approximated, or padded with 1's and then the absolute value of  $X$  may be taken. For larger values of  $X$ ,  $X^2$  may be ignored as assumed to be out of threshold.

Please replace the paragraph from page 8, line 28 through page 9, line 3, with the following rewritten paragraph:

Referring now to FIG. 7, an anti-block noise filter control state machine in accordance with the present invention will be discussed. State machine 700 describes the flow of filter bank transitions for anti-block filter 118 or 610, for example. Initially, the filter is in an idle state 710. Upon a predetermined condition 722 being satisfied, transitions are made in succession to filter bank states 712-718. The condition may be based upon the calculated average mean and average variance values. Upon completion of filtering, a transition is made to a complete state 720. A transition is made to idle state 710 based on conditions 724.

Please replace the paragraph from page 9, lines 4-10, with the following rewritten paragraph:

Referring now to FIG. 8, an anti-block noise filter data path state machine will be discussed. An anti-block noise filter data path is shown in FIG. 9. State machine 800 includes an idle state 810. A transition is made from idle state 810 to a write state 812 upon satisfaction of condition 816. A transition is made from write state 812 to read state 814 upon satisfaction of condition 818. A transition is made from read state 814 to write state 812 upon satisfaction of condition 820. A transition is made from write state 812 to idle state 810 upon satisfaction of condition 822. The conditions 816-822 may be based upon the calculated average mean and average variance values.